



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/665,474   | 09/22/2003  | Seok Woo Lee         | 8733.916.00-US      | 5512             |
| 30827  | 7590        | 09/07/2007           | EXAMINER            |                  |
| MCKENNA LONG & ALDRIDGE LLP<br>1900 K STREET, NW<br>WASHINGTON, DC 20006 |             |                      |                     | CALEY, MICHAEL H |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 2871   |             |                      |                     |                  |
| MAIL DATE  |             | DELIVERY MODE        |                     |                  |
| 09/07/2007   |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|------------------------------|------------------------|---------------------|--|
|                              | 10/665,474             | LEE ET AL.          |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Michael H. Caley       | 2871                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 18 April 2007.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-4, 6, 7, and 9-17 is/are rejected.

7)  Claim(s) 5 and 8 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 22 September 2003 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application .

6)  Other: \_\_\_\_ .

**DETAILED ACTION**

***Response to Appeal Brief***

In view of the Appeal Brief filed on 4/18/07, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

David C. Nelms



***Claim Rejections - 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatani et al. (U.S. Patent No. 4,862,153 “Nakatani”).**

Regarding claim 1, Nakatani discloses a LCD device comprising:

a main support (Figure 5 element 4);

a liquid crystal panel (Figure 5 element 6) installed on a front surface of the main support; and

a film (Figure 5 element 2) connected to the liquid crystal panel with a drive integrated circuit (Figure 5 element 1; Column 4 lines 43-44) that drives the liquid crystal panel mounted thereon, wherein the drive integrated circuit is disposed on the film facing the front surface of the main support.

Regarding claim 7, Nakatani discloses a panel guide between the main support and the liquid crystal panel to support the liquid crystal panel (Figure 5 element 3).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2-4, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani in view of Murayama et al. (U.S. Patent No. 6,160,605 "Murayama").**

Regarding claim 2, Nakatani fails to disclose a control board electrically connected to the film. Murayama, however, teaches a control board (Figure 3 element 109) as electrically connected to an analogous film (Figure 3 elements 207 and 210).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have connected a control board to the external connection element disclosed by Nakatani such that the control board would be electrically connected to the film. Murayama teaches such a control board as essential to provide the power supply voltage and control signals to the drive integrated circuits (Column 6 lines 11-18). One would have been motivated to provide such a control board in the display device disclosed by Nakatani as a means of providing power and control signals to the driving IC devices, thus enabling a functioning display.

Regarding claim 3, Nakatani as modified by Murayama discloses a printed circuit board between the film and the control board and a plurality of signal wiring patterns for transmitting a control signal from the control board to the film (Nakatani: Figure 5 element 7; Column 4 lines 8-9).

Regarding claims 4 and 9, Nakatani as modified by Murayama discloses a flexible printed circuit film connecting the printed circuit board to the control board (Murayama: Figure 3 element 110).

Regarding claim 6, Nakatani discloses the main support as having a side surface and the printed circuit board as facing only the side surface of the main support (Column 4 lines 29-42).

Regarding claim 10, Nakatani discloses the control board as disposed at a rear surface of the main support (Figure 5 elements 4 and 7).

**Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable Nakatani in view of Ueda et al. (U.S. Patent No. 5,838,412 "Ueda").**

Regarding claims 11-14, Nakatani fails to disclose a metal case top as combined with the main support by screws and as bent to cover an edge of the liquid crystal panel. Ueda, however, teaches such a case top (Figure 26 element SHD; Column 8 lines 11-19; Column 9 lines 11-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a case top as proposed in the liquid crystal display device disclosed by Nakatani. One would have been motivated to include such a case top as a means of protecting the top side of the display device as well as to aid in securely fixing the display components (Column 9 lines 28-31).

Regarding claim 15, Nakatani fails to disclose a backlight. Ueda teaches a backlight as a means of illuminating the liquid crystal display element (Column 20 lines 6-14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a backlight in the display device disclosed by Nakatani. One would have been motivated to use a backlight as a means of illuminating the display to make images visible to a user according to conventional means (Column 20 lines 6-14).

Regarding claims 16 and 17, Nakatani fails to explicitly disclose a data film as attached to a data pad on the liquid crystal panel and a gate film as attached to a gate pad. Ueda teaches pads and films as designated as for gate drivers and data drivers (Figure 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pad and film portions as gate and data film and pad areas. As is conventional in the art, gate and data drivers are necessary to drive an array of thin film transistor (TFT) switching elements. One would have been motivated to form the gate and data pad and film areas accordingly to benefit from the known advantages of having TFT switching elements, such as a fast switching speed.

#### *Allowable Subject Matter*

Claims 5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*mhc*  
Michael H. Caley  
September 2007